	n 3160-3		
	gust 2007)		FORM APPROVED
(	UNITED STATES		OMB NO. 1004-0137
	DEPARTMENT OF THE INT	TEDIOD -	Expires: July 31, 2010
	BUREAU OF LAND MANAG	5. Lease Serial No.	
	APPLICATION FOR PERMIT TO DRI	UTU-141301	
	A PERMIT TO DRI	LL OR REENTER	6. If Indian, Allottee or Tribe Name
-			Ute Tribe
1a.	Type of Work: X DRILL REI		7. If Unit or CA Agreement, Name and No.
	I DAME	ENTER	891008900A
	Type of Well: Oil Well X Gas Well Other	Single Zone X Multiple Z	8. Lease Name and Well No. one NBU 920-29N
2.	Name of Operator		9. API Well No.
	Kerr-McGee Oil & Gas Onshore,	, LP	1/2 212118 - 2
3a.	Address 3b.	Phone No. (include area code)	43-047-405-60
	PO Box 173779	Raleen White	10. Field and Pool, or Exploratory
	Denver, CO 80217-3779	720,020,6666	Natural Buttes Field
4.	Location of well (Report location clearly and In accordance with any S. At surface	tate requirements.*) NAD 83	11. Sec.,T.,R.,M.,or Blk.and Survey or A
	1,254' FSL 2,098' FWL SE/4 SW/4 Lat.	40.00222 Long109.6	
	At proposed prod. zone 611658 K 40.		29 T 9S R 20E S.L.B. & M.
	At proposed prod. zone 44286054	-109.691922	5.L.B. & M.
14.	Distance in miles and direction from the nearest town or post office*		12. County or Parish 13. State
	Approximately 37 miles south of Vernal, Utah		****
15.	Distance from proposed*	16. No. of acres in lease	Uintah Utah
:	location to nearest	10. No. of acres in lease	17. Spacing Unit dedicated to this well
	property or lease line, ft. 1,254'	120.00	Unit well
10	(Also to nearest drlg. unit line, if any)		Oint wen
	Distance from proposed location*	19. Proposed Depth	20. BLM/ BIA Bond No. on file
	to nearest well, drilling, completed, ±800' applied for, on this lease, ft.	10,600'	WYB000291
	Elevations (Show whether DF. RT, GR, etc.)		<u>'</u>
	4.705 LCD	22. Aproximate date work will st	art* 23. Estimated duration
	4,785 GR KB	ASAP	10 days
		24. Attachments	
The fo	ollowing, completed in accordance with the requirements of Onshore Oi	l and Gas Order No. 1 shall be attache	of to this form:
_	Well plat certified by a registered surveyor.	4. Bond to cover the op	erations unless covered by existing bond on file(see
	A Drilling Plan. A Surface Use Plan ( if the location is on National Forest System Lands, t	item 20 above).	
S	SUPO shall be filed with the appropriate Forest Service Office).		
	appropriate to total del vice office).	o. Such other site specification authorized officer.	fic information and/ or plans as may be required by the a
25. Si	guature Name		
	Kallen White	(Printed/Typed)	Calcen White Date
Title	- Count vorus	,	2.13.2009
- 1010	St Regulatory Analyst	E-mail:	raleen.white@anadarko.com
Anned	yed By (Signaturle) N	Phone:	720-929-6666
v.thhid	Name	(Printed/Typed)	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

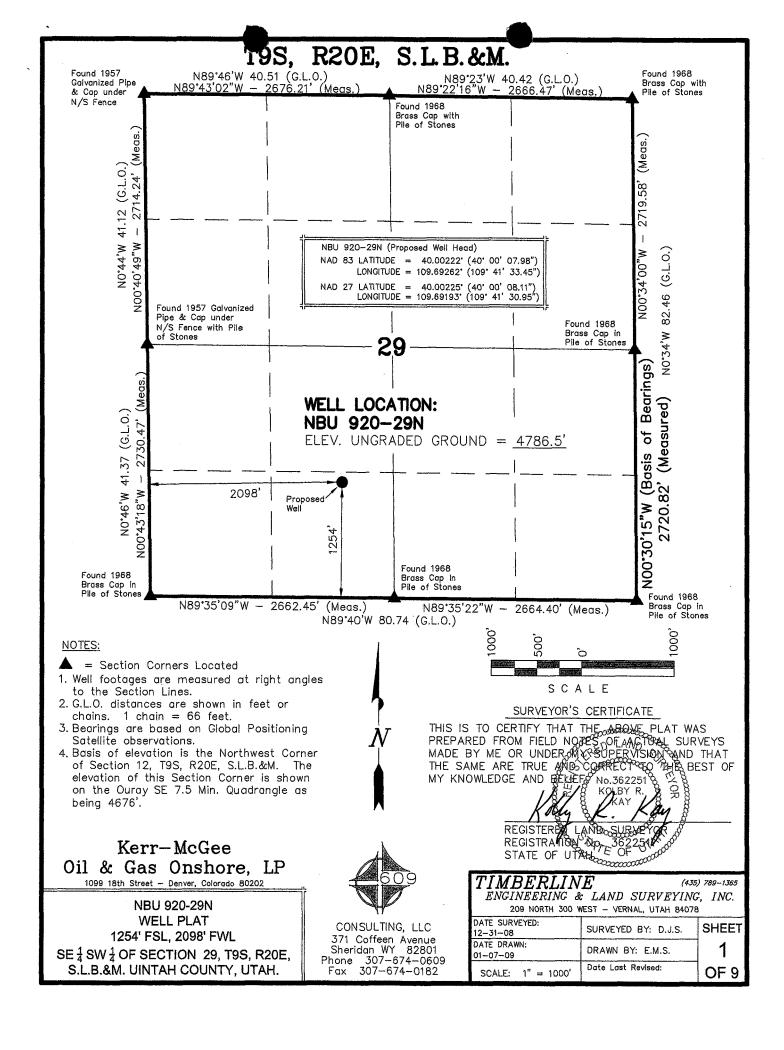
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

\* (Instructions on page 2)

HECEIVED

FEB 17 2009



# NBU 920-29N SESW Sec. 29, T9S R20E UINTAH COUNTY, UTAH UTU-141301

# ONSHORE ORDER NO. 1

# DRILLING PROGRAM

# 1. - 2. Estimated Tops of Important Geologic Markers: Estimated Depths of Anticipated Water, Oil, Gas, or Mineral Formations:

<u>Formation</u>	<u>Depth</u>	Resource
Uinta	0 - Surface	
Green River	1,634'	
Birds Nest	1,868'	Water
Mahogany	2,367'	Water
Wasatch	5,120'	Gas
Mesaverde	8,489'	Gas
MVU2	9,393'	Gas
MVL1	9,865'	Gas
TD	10,600'	

# 3. Pressure Control Equipment (Schematic Attached)

Please see the Natural Buttes Unit Standard Operating Procedure (SOP).

# 4. Proposed Casing & Cementing Program:

Please see the Natural Buttes Unit SOP. See attached drilling diagram.

# 5. <u>Drilling Fluids Program</u>:

Please see the Natural Buttes Unit SOP.

# 6. Evaluation Program:

Please see the Natural Buttes Unit SOP.

# 7. Abnormal Conditions:

Maximum anticipated bottomhole pressure calculated at 10,600' TD, approximately equals 6,769 psi (calculated at 0.64 psi/foot).

Maximum anticipated surface pressure equals approximately 4,437 psi (bottomhole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot).

# 8. Anticipated Starting Dates:

Drilling is planned to commence immediately upon approval of this application.

# 9. <u>Variances:</u>

Please see Natural Buttes Unit SOP Onshore Order #2 – Air Drilling Variance Kerr-McGee Oil & Gas Onshore LP (KMG) respectfully requests a variance to several requirements associated with air drilling outlined in Onshore Order 2

- Blowout Prevention Equipment (BOPE) requirements;
- Mud program requirements; and
- Special drilling operation (surface equipment placement) requirements associated with air drilling.

This Standard Operating Practices addendum provides supporting information as to why KMG current air drilling practices for constructing the surface casing hole should be granted a variance to Onshore Order 2 air drilling requirements.

The reader should note that the air rig is used only to construct a stable surface casing hole through a historically difficult lost circulation zone. A conventional rotary rig follows the air rig, and is used to drill and construct the majority of the wellbore.

More notable, KMG has used the air rig layout and procedures outlined below to drill the surface casing hole in approximately 675 wells without incident of blow out or loss of life.

# Background

In a typical well, KMG utilizes an air rig for drilling the surface casing hole, an interval from the surface to surface casing depths, which varies in depth from 1,700 to 2,800 feet. The air rig drilling operation does not drill through productive or over pressured formations in KMG field, but does penetrate the Uinta and Green River Formations. The purpose of the air drilling operation is to overcome the severe loss circulation zone in the Green River known as the Bird's Nest while creating a stable hole for the surface casing. The surface casing hole is generally drilled to approximately 500 feet below the Bird's Nest.

Before the surface air rig is mobilized, a rathole rig is utilized to set and cement conductor pipe through a competent surface formation. Generally, the conductor is set at 40 feet. In some cases, conductor may be set deeper in areas that the surface formation is not found competent. This rig also drills the rat and mouse holes in preparation for the surface casing and production string drilling operations.

The air rig is then mobilized to drill the surface casing hole by drilling a 12-1/4 inch hole to just above the Bird's Nest interval with an air hammer. The hammer is then tripped and replaced with a 12-1/4 inch tri-cone bit. The tri-cone bit is used to drill to the surface casing point, approximately 500 feet below the loss circulation zone (Bird's Nest). The 9-5/8 inch surface casing is then run and cemented in place, thereby isolating the lost circulation zone.

KMG fully appreciates Onshore Order 2 well control and safety requirements associated with a typical air drilling operations. However, the requirements of Onshore Order 2 are excessive with respect to the air rig layout and drilling operation procedures that are currently in practice to drill and control the surface casing hole in KMG Fields.

# Variance for BOPE Requirements

The air rig operation utilizes a properly lubricated and maintained air bowl diverter system which diverts the drilling returns to a six-inch blooie line. The air bowl is the only piece of BOPE equipment which is installed during drilling operations and is sufficient to contain the air returns associated with this drilling operation. As was discussed earlier, the drilling of the surface hole does not encounter any over pressured or productive zones, and as a result standard BOPE equipment should not be required. In addition, standard drilling practices do not support the use of BOPE on 40 feet of conductor pipe.

# Variance for Mud Material Requirements

Onshore Order 2 also states that sufficient quantities of mud materials shall be maintained or readily accessible for the purpose of assuring adequate well control. Once again, the surface hole drilling operations does not encounter over pressured or productive intervals, and as a result there is not a need to control pressure in the surface hole with a mud system. Instead of mud, the air rigs utilize water from the reserve pit for well control, if necessary. A skid pump which is located near the reserve pit (see attachment) will supply the water to the well bore.

Variance for Special Drilling Operation (surface equipment placement) Requirements Onshore Order 2 requires specific safety distances or setbacks for the placement of associated standard air drilling equipment, wellbore, and reserve pits. The air rigs used to drill the surface holes are not typical of an air rig used to drill a producing hole in other parts of the US. These are smaller in nature and designed to fit a KMG location. The typical air rig layout for drilling surface hole in the field is attached.

Typically the blooie line discharge point is required to be 100 feet from the well bore. In the case of a KMG well, the reserve pit is only 45 feet from the rig and is used for the drill cuttings. The blooie line, which transports the drill cuttings from the well to the reserve pit, subsequently discharges only 45 feet from the well bore.

Typically the air rig compressors are required to be located in the opposite direction from the blooie line and a minimum of 100 feet from the well bore. At the KMG locations, the air rig compressors are approximately 40 feet from the well bore and approximately 60 feet from the blooie line discharge due to the unique air rig design. The air compressors (see attachment) are located on the rig (1250 cfm) and on a standby trailer (1170 cfm). A booster sits between the two compressors and boosts the output from 350 psi to 2000 psi. The design does put the booster and standby compressor opposite from the blooie line.

Lastly, Onshore Order 2 addresses the need for an automatic igniter or continuous pilot light on the blooie line. The air rig does not utilize an igniter as the surface hole drilling operation does not encounter productive formations.

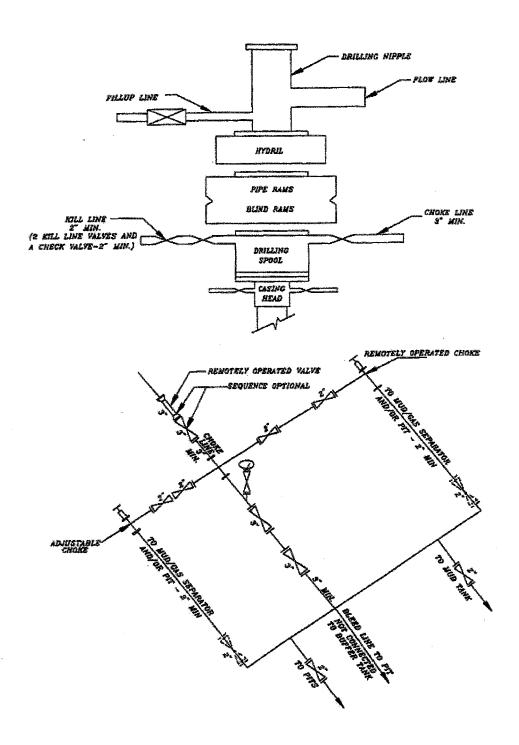
# Conclusion

The air rig operating procedures and the attached air rig layout have effectively maintained well control while drilling the surface holes in KMG Fields. KMG respectfully requests a variance from Onshore Order 2 with respect to air drilling well control requirements as discussed above.

# 10. Other Information:

Please see Natural Buttes Unit SOP.

# EXHIBIT A NBU 920-29N



SCHEMATIC DIAGRAM OF 5,000 PSI BOP STACK

# NBU 920-29N SESW Sec. 29 T9S R20E UINTAH COUNTY, UTAH UTU-141301

# ONSHORE ORDER NO. 1

# MULTI-POINT SURFACE USE & OPERATIONS PLAN

# 1. Existing Roads:

Refer to the attached location directions.

Refer to Topo Maps A and B for location of access roads within a 2-mile radius.

# 2. Planned Access Roads:

Approximately ±3,040' of new access road is proposed. Refer to Topo Map B.

Existence of pipelines; maximum grade; turnouts; major cut and fills, culverts, or bridges; gates, cattle guards, fence cuts, or modifications to existing facilities were determined at the on-site.

Please see the Natural Buttes Unit Standard Operating Procedure (SOP).

# 3. <u>Location of Existing Wells Within a 1-Mile Radius:</u>

Please refer to Topo Map C.

# 4. Location of Existing & Proposed Facilities:

Please see the Natural Buttes Unit SOP.

Refer to Topo Map D for the location of the proposed pipelines.

# Variances to Best Management Practices (BMPs) Requested:

This exception to the BMP should be granted by the BLM Authorized Officer because indurated bedrock, such as sandstone, is at or within 2 feet of the surface and the soil has a poor history for successful rehabilitation.

All facilities will be painted within six months of installation. Facilities required to comply with the Occupational Safety and Health Act (OSHA) will be excluded. The requested color is Shadow gray (2.5Y 6/2), a non-reflective earthtone.

Interim Surface Reclamation Plan:

This exception is requested due to the current twin and multi-well program. If determined that this well will not be a candidate for either twinning &/or multi-well the operator shall spread the topsoil pile on the location up to the rig anchor points. The location will be reshaped to the original contour to the extent possible. The operator will reseed the area using the BLM recommended seed mixture and reclamation methods.

# 5. <u>Location and Type of Water Supply:</u>

Please see the Natural Buttes SOP.

# 6. Source of Construction Materials:

Please see the Natural Buttes SOP.

# 7. Methods of Handling Waste Materials:

Please see the Natural Buttes SOP.

A plastic reinforced liner is to be used as discussed during on-site inspection. It will be a minimum of 20 mil thick and felt, with sufficient bedding used to cover any rocks. The liner will overlap the pit walls and be covered with dirt and/or rocks to hold it in place. No trash or scrap that could puncture the liner will be disposed of in the pit.

Any produced water from the proposed well will be contained in a water tank and will then be hauled by truck to one of the pre-approved disposal sites: RNI, Sec. 5, T9S, R22E, NBU #159, Sec. 35, T9S R21E, Ace Oilfield, Sec. 2, T6S, R20E, MC&MC, Sec. 12, T6S, R19E, Pipeline Facility Sec. 36, T9S, R20E, Goat Pasture Evaporation Pond SW/4 Sec. 16, T10S, R22E, Bonanza Evaporation Pond Sec. 2, T10S, R23E (Request is in lieu of filing Form 3160-5, after initial production).

# 8. Ancillary Facilities:

Please see the Natural Buttes SOP.

# 9. Well Site Layout: (See Location Layout Diagram)

The attached Location Layout Diagram describes drill pad cross-sections, cuts and fills, and locations of the mud tanks, reserve pit, flare pit, pipe racks, trailer parking, spoil dirt stockpile(s), and surface material stockpile(s).

Please see the attached diagram to describe rig orientation, parking areas, and access roads.

Location size may change prior to the drilling of the well due to the current rig availability. If the proposed location is not large enough to accommodate the drilling rig. The location will be resurveyed and a form 3160-5 will be submitted.

# 10. Plans for Reclamation of the Surface:

Please see the Natural Buttes SOP.

Operator shall call the BIA for the seed mixture when the final reclamation occurs.

# 11. Surface/Mineral Ownership:

The well pad and access road are located on lands owned by:

Ute Indian Tribe P.O. Box 70 Fort Duchesne, Utah 84026 (435) 722-5141

The mineral ownership is listed below:

United States of America Bureau of Land Management 170 South 500 East Vernal, UT 84078 (435)781-4400

# 12. <u>Stipulations/Notices/Mitigation:</u>

There are no stipulations or notices for this location.

# 13. Other Information:

A Class III archaeological survey has been performed and will be submitted upon receipt. Paleo report is attached.

# 14. Lessee's or Operator's Representative & Certification:

Raleen White Sr. Regulatory Analyst Kerr-McGee Oil & Gas Onshore LP P.O. Box 173779 Denver, CO 80217-3779 (720) 929-6666 Tommy Thompson Drilling Manager Kerr-McGee Oil & Gas Onshore LP P.O. Box 173779 Denver, CO 80217-3779 (720) 929-6724

Certification: All lease and/or unit operations will be conducted in such a manner that full compliance is made with all applicable laws, regulations, Onshore Oil and Gas Orders, the approved Plan of Operations, and any applicable Notice to Lessees.

Kerr-McGee Oil & Gas Onshore LP is considered to be the operator of the subject well. Kerr-McGee Oil & Gas Onshore LP agrees to be responsible under the terms and conditions of the lease for the operations conducted upon leased lands.

The Operator will be fully responsible for the actions of its subcontractors. A complete copy of the approved "Application for Permit to Drill" will be furnished to the field representative(s) to ensure compliance and shall be on location during all construction and drilling operations.

Bond coverage pursuant to 43 CFR 3104 for lease activities is being provided by Bureau of Land Management Nationwide Bond #WYBOOVEN.

I hereby certify that I, or persons under my supervision, have inspected the proposed drill site and access route, that I am familiar with the conditions that currently exist; that I have full knowledge of the State and Federal laws applicable to this operation; that the statements made in this plan are, to the best of my knowledge, true and correct; and the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

ralen Write

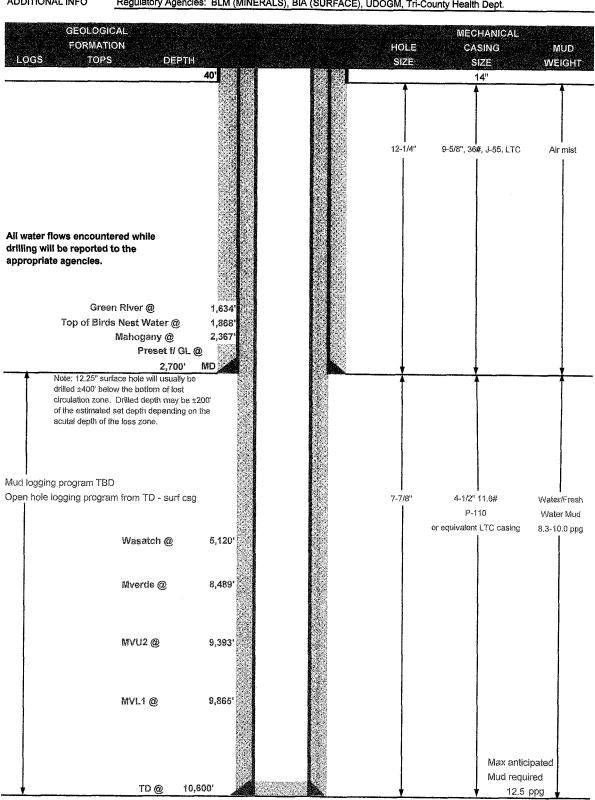
21/2/2009

Date



# KERR-McGEE OIL & GAS ONSHORE LP DRILLING PROGRAM

COMPANY NAME KERR-McGEE OIL & GAS ONSHORE LP DATE February 5, 2009 WELL NAME **NBU 920-29N** 10,600' MD/TVD TD FIELD Natural Buttes COUNTY Uintah STATE Utah **ELEVATION** 4,785' GL KB 4,800' SURFACE LOCATION SE/4 SW/4 1,254' FSL 2,098' FWL Sec 29 T 9S Straight Hole R 20E BHL Latitude: 40.002220 Longitude: -109.692620 NAD 83 OBJECTIVE ZONE(S) Wasatch/Mesaverde ADDITIONAL INFO Regulatory Agencies: BLM (MINERALS), BIA (SURFACE), UDOGM, Tri-County Health Dept.





# RR-McGEE OIL & GAS ONSHORE LP DRILLING PROGRAM

#### **CASING PROGRAM**

	SUPPLIES AND FRANCES	100 PA Vol - 111 PA V	les conserva	22261 2220				1	DESIGN FACT	ORS
	SIZE	INT	ERVA	L	WT.	GR.	CPLG.	BURST	COLLAPSE	TENSION
CONDUCTOR	14"		0-40'							
•								3,520	2,020	453,000
SURFACE	9-5/8"	0	to	2700	36.00	J-55	LTC	0.77	1.60	5.93
								10,690	7,580	279,000
PRODUCTION	4-1/2"	0	to	10600	11.60	P-110	LTC	2.35	1.10	2.60
								1500 X 250 11 10 40		and the second second second

- 1) Max Anticipated Surf. Press.(MASP) (Surface Casing) = (Pore Pressure at next csg point-(0.22 psi/ft-partial evac gradient x TVD of next csg point))
- 2) MASP (Prod Casing) = Pore Pressure at TD (0.22 psi/ft-partial evac gradient x TD)

(Burst Assumptions: TD =

12.5 ppg) 0.22 psi/ft = gradient for partially evac wellbore

(Collapse Assumption: Fully Evacuated Casing, Max MW)

(Tension Assumptions: Air Weight of Casing\*Buoy.Fact. of water)

MASP

4,437 psi

3) Maximum Anticipated Bottom Hole Pressure (MABHP) = Pore Pressure at TD

(Burst Assumptions: TD =

12.5 ppg)

0.64 psi/ft = bottomhole gradient

(Collapse Assumption: Fully Evacuated Casing, Max MW)

(Tension Assumptions: Air Weight of Casing\*Buoy.Fact. of water)

6,769 psi

# MABHP **CEMENT PROGRAM**

		inament francisco de la companya de	Market and an extra transfer and the second				
		FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGHT	YIELD
SURFACE	LEAD	500	Premium cmt + 2% CaCl	215	60%	15.60	1,18
Option 1			+ .25 pps flocele	in de	Ave a PC		
	TOP OUT CMT (1)	200	20 gals sodium silicate + Premium cmt	50		15.60	1.18
			+ 2% CaCl + .25 pps flocele				339957933
	TOP OUT CMT (2)	as required	Premium cmt + 2% CaCl	as req.		15.60	1.18
SURFACE			NOTE: If well will circulate water to sur	face, opti	on 2 will be	utilized	
Option 2	LEAD	1500	Prem crnt + 16% Gel + 10 pps gilsonite	170	35%	11.00	3.82
			+ 25 pps Flocele + 3% salt BWOC				
	TAIL	500	Premium cmt + 2% CaCl	180	35%	15.60	1.18
			+ .25 pps flocele				
	TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.	er it i sekurten filili deg	15.60	1.18
				030801.9		<u>, walio ba</u> an ya waxa	0.54(0.54)
PRODUCTION	ON LEAD	4,620'	Premium Lite II + 3% KCI + 0.25 pps	500	60%	11.00	3.38
			celloflake + 5 pps gilsonite + 10% gel	(949.)			
			+ 0.5% extender				
	TAIL	5,980'	50/50 Poz/G + 10% salt + 2% gei	1670	60%	14.30	1.31
			+:1% R-3				

<sup>\*</sup>Substitute caliper hole volume plus 0% excess for LEAD if accurate caliper is obtained

#### **FLOAT EQUIPMENT & CENTRALIZERS**

SURFACE

Guide shoe, 1 jt, insert float. Centralize first 3 joints with bow spring centralizers. Thread lock guide shoe.

PRODUCTION

Float shoe, 1 jt, float collar. Centralize first 3 joints & every third joint to top of tail cement with bow spring centralizers.

# **ADDITIONAL INFORMATION**

Test casing head to 750 psi after installing. Test surface casing to 1,500 psi prior to drilling out.

BOPE: 11" 5M with one annular and 2 rams. The BOPE will be installed before the production hole is drilled and tested to 5,000 psi (annular to 2,500 psi) prior to drilling out the surface casing shoe. Record on chart recorder and tour sheet. Function test rams on each trip. Maintain safety valve and inside BOP on rig floor at all times. Most rigs have top drives; however, if used, the Kelly is to be equipped with upper and lower kelly valves.

Drop Totco surveys every 2000'.	Maximum allowable	hole angle is 5 degrees.

Most rigs have PVT Systems for mud monitoring. If no PVT is available, visual monitoring will be utilized.

DRILLING	ENGINEER:
----------	-----------

John Huycke / Grant Schluender

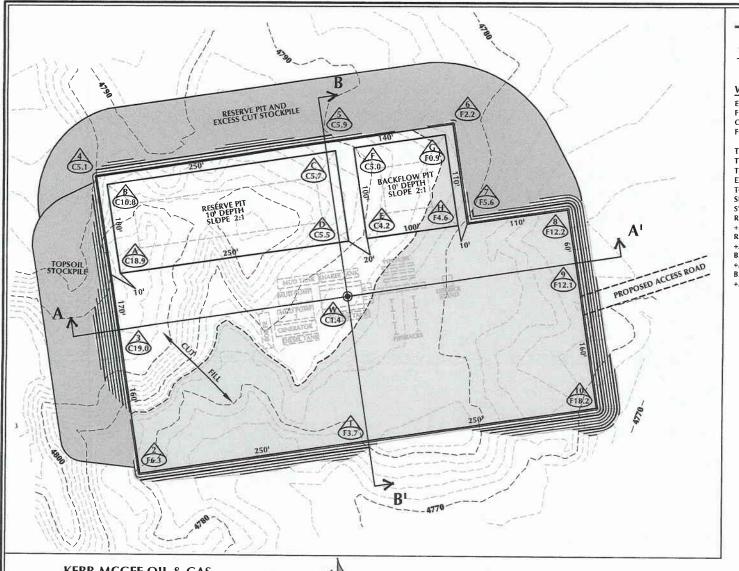
DATE:

DRILLING SUPERINTENDENT:

John Merkel / Lovel Young

DATE:

<sup>\*</sup>Substitute caliper hole volume plus 10% excess for TAIL if accurate caliper is obtained



#### **WELL PAD LEGEND**

WELL LOCATION EXISTING CONTOURS (2' INTERVAL) PROPOSED CONTOURS (2' INTERVAL)

#### **WELL PAD NBU 920-29N QUANTITIES**

EXISTING GRADE @ LOC. STAKE = 4,786,51
FINISHED GRADE ELEVATION = 4,785.11 CUT SLOPES = 1,5:1 FILL SLOPES = 1.5:1

TOTAL CUT FOR WELL PAD = 24,551 C.Y. TOTAL FILL FOR WELL PAD = 24,276 C.Y. TOPSOIL @ 6" DEPTH = 3,238 C.Y. EXCESS MATERIAL = 275 C.Y. TOTAL DISTURBANCE = 4.01 ACRES SHRINKAGE FACTOR = 1.10 SWELL FACTOR = 1.00 RESERVE PIT CAPACITY (2' OF FREEBOARD) +/- 25,880 BARRELS RESERVE PIT VOLUME +/- 7,185 CY BACKFLOW PIT CAPACITY (2' OF FREEBOARD) +/- 8,780 BARRELS **BACKFLOW PIT VOLUME** +/- 2,520 CY

# **KERR-MCGEE OIL & GAS** ONSHORE L.P.

1099 18th Street - Denver, Colorado 80202

NBU 920-29N **WELL PAD - LOCATION LAYOUT** 1254' FSL, 2098' FWL SE1/4SW1/4, SECTION 29, T.9S., R.20E. S.L.B.&M., UINTAH COUNTY, UTAH



#### CONSULTING, LLC 371 Coffeen Avenue Sheridan WY 82801 Phone 307-674-0609 Fax 307-674-0182

Scale:	1"=100"	Date:	1/12/09	SHEET NO:	
			BY	2	
REVISED	):		DATE		2 OF 9

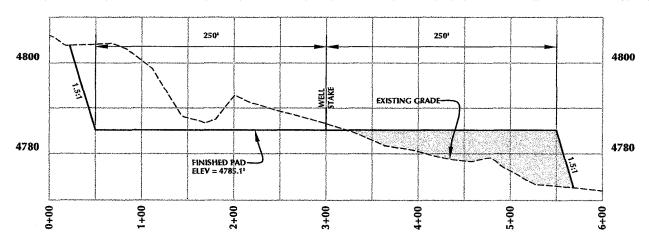


HORIZONTAL

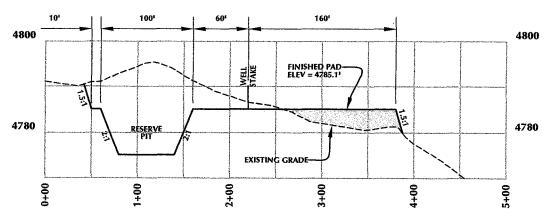
21 CONTOURS

**Timberline** Engineering & Land Surveying, Inc. 38 WEST 100 NORTH

(435) 789-1365 VERNAL, UTAH 84078



# **CROSS SECTION A-A**<sup>1</sup>



# **CROSS SECTION B-B'**

NOTE: CROSS SECTION B-B' DEPICTS MAXIMUM RESERVE PIT DEPTH.

KERR-MCGEE OIL & GAS ONSHORE L.P.

1099 18th Street - Denver, Colorado 80202

NBU 920-29N
WELL PAD - CROSS SECTIONS
1254' FSL, 2098' FWL
SE1/4SW1/4, SECTION 29, T.9S., R.20E.
S.L.B.&M., UINTAH COUNTY, UTAH



CONSULTING, LLC 371 Coffeen Avenue Sheridan WY 82801 Phone 307-674-0609 Fax 307-674-0182

Scale:	1 <sup>81</sup> =100¹	Date:	1/12/09	SHEET NO:	
REVISED	:		BY DATE	3	3 OF 9

HORIZONTAL	0	50	100	1" = 100'
VERTICAL	0	10	20	1ª = 20¹

Timberline	(435) 789-1365
Engineering & Land	Surveving. Inc.
38 WEST 100 NORTH	VERNAL, UTAH 84078

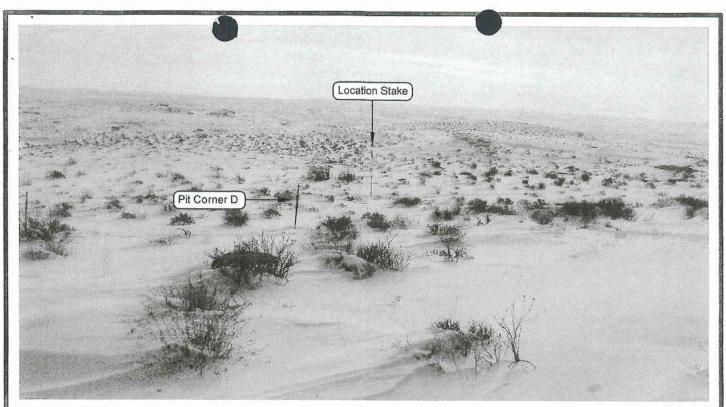


PHOTO VIEW: FROM PIT CORNER D TO L'OCATION STAKE

CAMERA ANGLE: SOUTHERLY

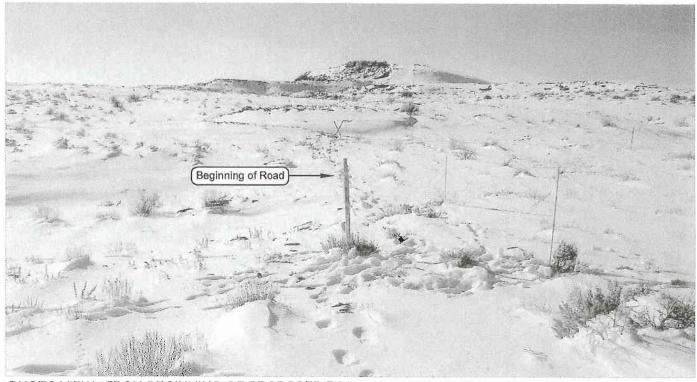


PHOTO VIEW: FROM BEGINNING OF PROPOSED ROAD

CAMERA ANGLE: WESTERLY

Kerr-McGee Oil & Gas Onshore, LP 1099 18th Street - Denver, Colorado 80202

NBU 920-29N 1254' FSL, 2098' FWL SE \(\frac{1}{4}\) SW \(\frac{1}{4}\) OF SECTION 29, T9S, R20E, S.L.B.&M. UINTAH COUNTY, UTAH.



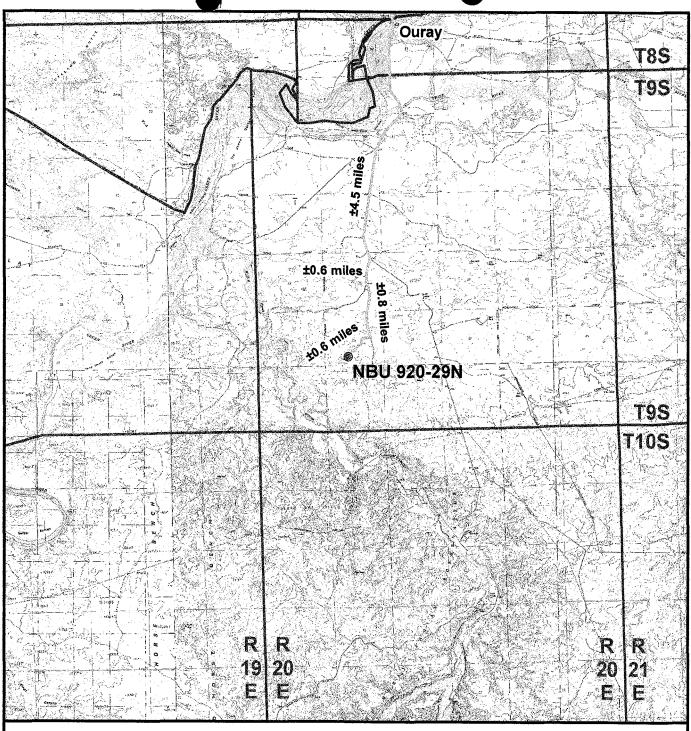
CONSULTING, LLC 371 Coffeen Avenue Sheridan WY 82801 Phone 307-674-0609 Fax 307-674-0182

LOCATION	DATE TAKEN: 12-31-08	
LOCATION PHOTOS		DATE DRAWN: 01-07-09
TAKEN BY: D.J.S.	DRAWN BY; E.M.S.	REVISED:

Timberline

(435) 789-1365 Engineering & Land Surveying, Inc. 209 NORTH 300 WEST VERNAL, UTAH 84078

SHEET OF 9



# Legend

- Proposed NBU 920-29N Well Location
- Access Route Proposed

Kerr-McGee Oil & Gas Onshore, LP 1099 18th Street, Denver, Colorado 80202

NBU 920-29N Topo A 1254' FSL, 2098' FWL SE'4 SW'4, Section 29, T9S, R20E S.L.B.&M., Uintah County, Utah

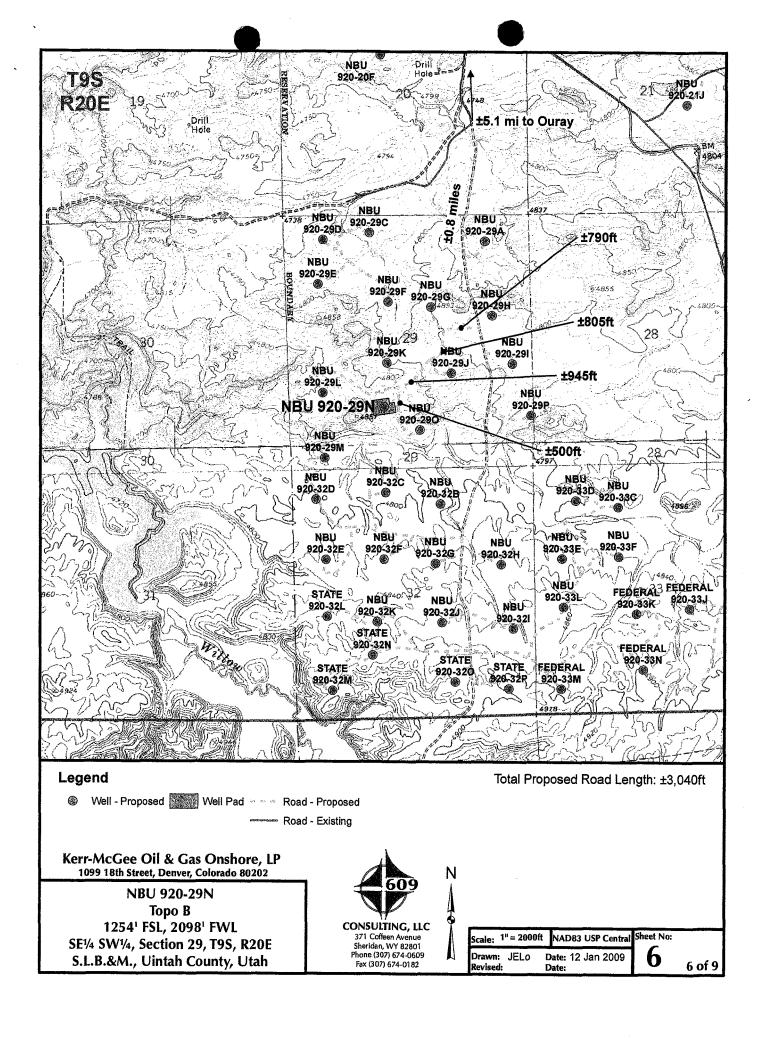


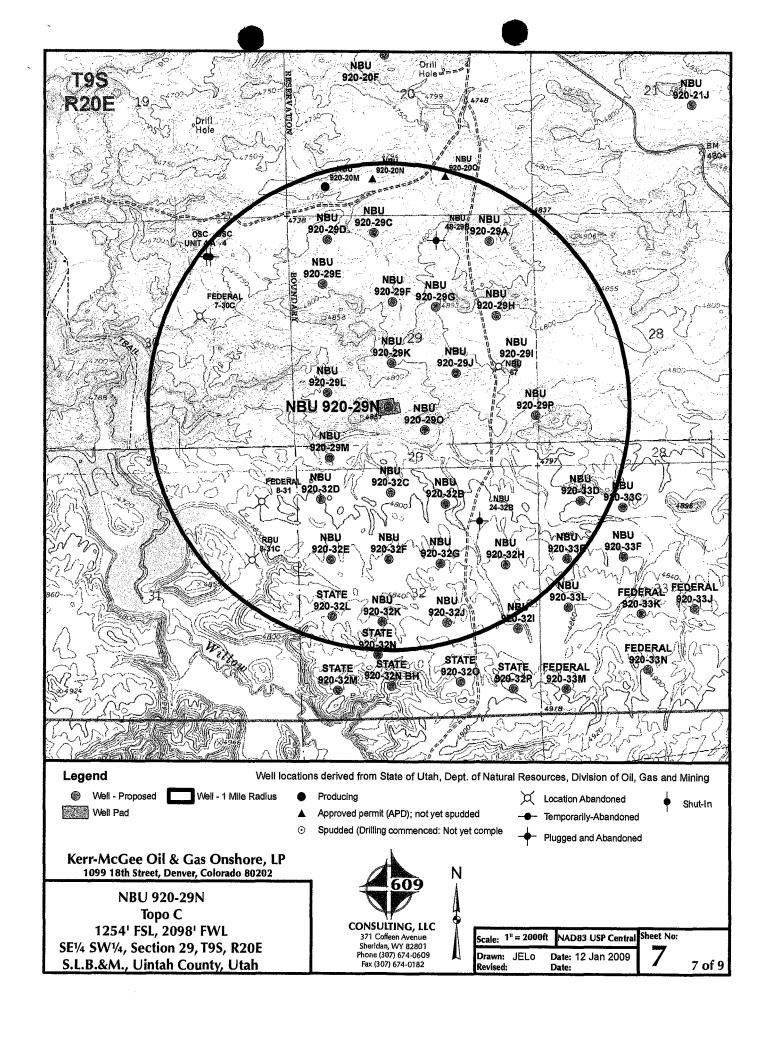
CONSULTING, LLC 371 Coffeen Avenue Sheridan, WY 82801 Phone (307) 674-0609 Fax (307) 674-0182

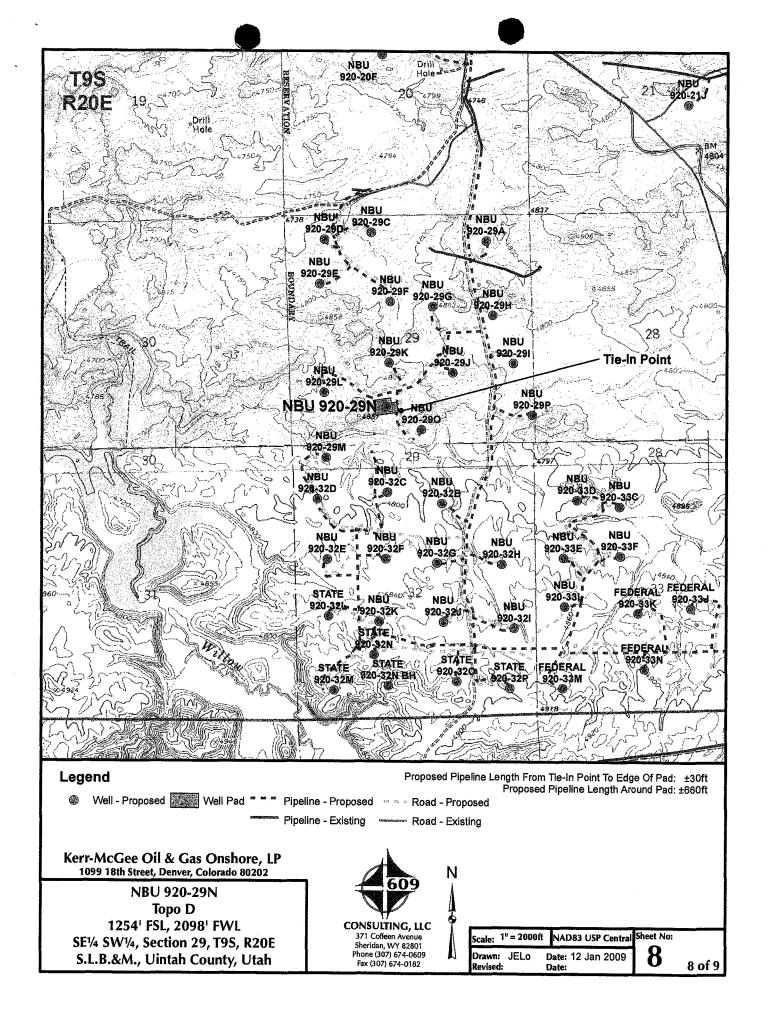
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# Kerr-McGee Oil & Gas Onshore, LP NBU 920-29N Section 29, T9S, R20E, S.L.B.&M.

PROCEED IN A WESTERLY DIRECTION FROM VERNAL, UTAH ALONG U.S. HIGHWAY 40 APPROXIMATELY 13.9 MILES TO THE JUNCTION OF STATE HIGHWAY 88. EXIT LEFT AND PROCEED IN A SOUTHERLY DIRECTION ALONG STATE HIGHWAY 88 APPROXIMATELY 16.8 MILES TO OURAY, UTAH. FROM OURAY, PROCEED IN A SOUTHERLY DIRECTION ALONG THE SEEP RIDGE ROAD (COUNTY B ROAD 2810) APPROXIMATELY 4.5 MILES TO THE INTERSECTION OF THE WILD HORSE BENCH ROAD (A CLASS D COUNTY ROAD). EXIT RIGHT AND PROCEED IN A SOUTHERLY DIRECTION ALONG THE WILD HORSE BENCH ROAD APPROXIMATELY 0.6 MILES TO THE INTERSECTION OF THE WILLOW CREEK ROAD (A CLASS D COUNTY ROAD). EXIT LEFT AND PROCEED IN A SOUTHERLY DIRECTION ALONG THE WILLOW CREEK ROAD APPROXIMATELY 0.8 MILES TO THE PROPOSED ACCESS ROAD. FOLLOW ROAD FLAGS IN A WESTERLY, THEN SOUTHWESTERY, THEN SOUTHERLY DIRECTION APPROXIMATELY 3,020 FEET TO THE PROPOSED LOCATION.

TOTAL DISTANCE FROM VERNAL, UTAH TO THE PROPOSED WELL LOCATION IS APPROXIMATELY 37.2 MILES IN A SOUTHERLY DIRECTION.

# Paleontological Reconnaissance Survey Report

Survey of Kerr McGee's Proposed Gathering Pipeline, Well Pads, Access Roads, and Pipelines for "NBU #920-29M & N", "NBU #920-32C, E, F, & K", & "State #920-32L, M, N, & O" (Sec. 29 & 32, T 9 S, R 20 E)

Big Pack Mtn NW Topographic Quadrangle Uintah County, Utah

December 18, 2008

Prepared by Stephen D. Sandau Paleontologist for Intermountain Paleo-Consulting P. O. Box 1125 Vernal, Utah 84078

# INTRODUCTION

At the request of Raleen White of Kerr McGee Onshore LP and authorized by Bruce Pargeets of the Ute Indian Tribe and by Larry Love, Director of the Ute Indian Tribe's Energy and Minerals Department, a paleontological reconnaissance survey of Kerr McGee's proposed gathering pipeline, well pads, access roads, and pipelines for "NBU #920-29M & N", "NBU #920-32C, E, F, & K", & "State #920-32L, M, N, & O" (Sec. 29 & 32, T 9 S, R 20 E) was conducted by Daniel Burk on December 9, 2008. The survey was conducted under the Ute Indian Tribe Business License FY 2009, #A09-1308 and the accompanying Access Permit (effective 10/15/2008 through 3/31/2009). This survey to locate, identify and evaluate paleontological resources was done to meet requirements of the National Environmental Policy Act of 1969 and other State and Federal laws and regulations that protect paleontological resources.

#### FEDERAL AND STATE REQUIREMENTS

As mandated by the Federal and State government, paleontologically sensitive geologic formations on State lands that are considered for exchange or may be impacted due to ground disturbance require paleontological evaluation. This requirement complies with:

- 1) The National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. 4321.et. Seq., P.L. 91-190);
- 2) The Federal Land Policy and Management Act (FLPMA) of 1976 (90 Stat. 2743, 43 U.S.C. § 1701-1785, et. Seq., P.L. 94-579) and
- 3) The National Historic Preservation Act.16 U.S.C. § 470-1, P.L. 102-575 in conjunction with 42 U.S.C. § 5320

The new Potential Fossil Yield Classification (PFYC) System (October, 2007) replaces the Condition Classification System from Handbook H-8270-1. Geologic units are classified based on the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils and their sensitivity to adverse impacts, with a higher class number indicating a higher potential.

- Class 1 Very Low. Geologic units (igneous, metamorphic, or Precambrian) not likely to contain recognizable fossil remains.
- Class 2 Low. Sedimentary geologic units not likely to contain vertebrate fossils or scientifically significant non-vertebrate fossils. (Including modern eolian, fluvial and colluvial deposits etc...)
- Class 3 Moderate or Unknown. Fossiliferous sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence; or sedimentary units of unknown fossil potential.
  - Class 3a Moderate Potential. The potential for a project to be sited on or impact a significant fossil locality is low, but is somewhat higher for common fossils.
  - Class 3b Unknown Potential. Units exhibit geologic features and preservational conditions that suggest significant fossils could be present, but

little information about the paleontological resources of the unit or the area is known.

- Class 4 High. Geologic units containing a high occurrence of vertebrate fossils or scientifically significant invertebrate or plant fossils, but may vary in abundance and predictability.
  - o Class 4a Outcrop areas with high potential are extensive (greater than two acres) and paleontological resources may be susceptible to adverse impacts from surface disturbing actions.
  - Class 4b Areas underlain by geologic units with high potential but have lowered risks of disturbance due to moderating circumstances such as a protective layer of soil or alluvial material; or outcrop areas are smaller than two contiguous acres.
- Class 5 Very High. Highly fossiliferous geologic units that consistently and predictably produce vertebrate fossils or scientifically significant invertebrate or plant fossils.
  - o Class 5a Outcrop areas with very high potential are extensive (greater than two acres) and paleontological resources may be susceptible to adverse impacts from surface disturbing actions.
  - o Class 5b Areas underlain by geologic units with very high potential but have lowered risks of disturbance due to moderating circumstances such as a protective layer of soil or alluvial material; or outcrop areas are smaller than two contiguous acres.

It should be noted that many fossils, though common and unimpressive in and of themselves, can be important paleo-environmental, depositional, and chronostratigraphic indicators.

# **LOCATION**

Kerr McGee's proposed gathering pipeline, well pads, access roads, and pipelines for "NBU #920-29M & N", "NBU #920-32C, E, F, & K", & "State #920-32L, M, N, & O" (Sec. 29 & 32, T 9 S, R 20 E) are located on Ute Indian Reservation land less then a mile east of Willow Creek, approximately 5-6 miles south of the Green River, and some 7-8 miles south of Ouray, Utah. The project area can be found on the Big Pack Mtn NW 7.5 minute U. S. Geological Survey Quadrangle Map, Uintah County, Utah.

#### PREVIOUS WORK

The basins of western North America have long produced some of the richest fossil collections in the world. Early Cenozoic sediments are especially well represented throughout the western interior. Paleontologists started field work in Utah's Uinta Basin as early as 1870 (Betts, 1871; Marsh, 1871, 1875a, 1875b). The Uinta Basin is located in the northeastern corner of Utah and covers approximately 31,000 sq. km (12,000 sq. miles) ranging in elevation from 1,465 to 2,130 m (4,800 to 7,000 ft) (Marsell, 1964; Hamblin et al., 1987). Middle to late Eocene time marked a period of dramatic change in the climate, flora, (Stucky, 1992) and fauna (Black and Dawson, 1966) of North America.

# GEOLOGICAL AND PALEONTOLOGICAL OVERVIEW

Early in the geologic history of Utah, some 1,000 to 600 Ma, an east-west trending basin developed creating accommodation for 25,000 feet of siliclastics. Uplift of that filled-basin during the early Cenozoic formed the Uinta Mountains (Rasmussen et al., 1999). With the rise of the Uinta Mountains the asymmetrical synclinal Uinta Basin is thought to have formed through the effects of down warping in connection with the uplift. Throughout the Paleozoic and Mesozoic deposition fluctuated between marine and non-marine environments laying down a thick succession of sediments in the area now occupied by the Uinta Basin. Portions of these beds crop out on the margins of the basin due to tectonic events during the late Mesozoic.

Early Tertiary Uinta Basin sediments were deposited in alternating lacustrine and fluvial environments. Large shallow lakes periodically covered most of the basin and surrounding areas during early to mid Eocene time (Abbott, 1957). These lacustrine sediments show up in the western part of the basin, dipping 2-3 degrees to the northeast and are lost in the subsurface on the east side. The increase of cross-bedded, coarse-grained sandstone and conglomerates preserved in paleo-channels indicates a transition to a fluvial environment toward the end of the epoch.

Four Eocene formations are recognized in the Uinta Basin: the Wasatch, Green River, Uinta and Duchesne River, respectively (Wood, 1941). The Uinta Formation is subdivided into two lithostratigraphic units namely: the Wagonhound Member (Wood, 1934), formerly known as Uinta A and B (Osborn, 1895, 1929) and the Myton Member previously regarded as the Uinta C.

Within the Uinta Basin in northeast Utah, the Uinta Formation in the western part of the basin is composed primarily of lacustrine sediments inter-fingering with over-bank deposits of silt, and mudstone and westward flowing channel sands and fluvial clays, muds, and sands in the east (Bryant et al, 1990; Ryder et al, 1976). Stratigraphic work done by early geologists and paleontologists within the Uinta Formation focused on the definition of rock units and attempted to define a distinction between early and late Uintan faunas (Riggs, 1912; Peterson and Kay, 1931; Kay 1934). More recent work focused on magnetostratigraphy, radioscopic chronology, and continental biostratigraphy (Flynn, 1986; Prothero, 1996). Well-known for its fossiliferous nature and distinctive mammalian fauna of mid-Eocene Age, the Uinta Formation is the type formation for the Uintan Land Mammal Age (Wood et al, 1941).

The Duchesne River Formation of the Uinta Basin in northeastern Utah is composed of a succession of fluvial and flood plain deposits composed of mud, silt, and sandstone. The source area for these late Eocene deposits is from the Uinta Mountains indicated by paleocurrent data (Anderson and Picard, 1972). In Peterson's (1931c) paper, the name "Duchesne Formation" was applied to the formation and it was later changed to the "Duchesne River Formation" by Kay (1934). The formation is divided up into four members: the Brennan Basin, Dry Gulch Creek, LaPoint, and Starr Flat (Anderson and Picard, 1972). Debates concerning the Duchesne River Formation, as to whether its age was late Eocene or early Oligocene, have surfaced throughout the literature of the last century (Wood et al., 1941; Scott 1945). Recent paleomagnetostratigraphic work (Prothero, 1996) shows that the Duchesne River Formation is late Eocene in time.

#### FIELD METHODS

In order to determine if the proposed project area contained any paleontological resources, a reconnaissance survey was performed. An on-site observation of the proposed areas undergoing surficial disturbance is necessary because judgments made from topographic maps alone are often unreliable. Areas of low relief have potential to be erosional surfaces with the possibility of bearing fossil materials rather than surfaces covered by unconsolidated sediment or soils.

When found within the proposed construction areas, outcrops and erosional surfaces were checked to determine if fossils were present and to assess needs. Careful effort is made during surveys to identify and evaluate significant fossil materials or fossil horizons when they are found. Microvertebrates, although rare, are occasionally found in anthills or upon erosional surfaces and are of particular importance.

#### PROJECT AREA

The project area is situated in the Wagonhound Member (Uinta A & B) of the Uinta Formation. The following list provides a description of the individual wells and their associated pipelines and access roads.

#### NBU #920-29M

The proposed access road and pipeline begin in the NW/NW quarter-quarter section of Sec. 32, T 9 S, R 20 E at the north edge of the proposed well pad "NBU #920-32D" and travel approximately 800 feet north and east where they enter the well pad in the SW/SW quarter-quarter section of Sec. 29 (Figure 1). The proposed well pad, access road, and pipeline are located on rolling hills covered in desert pavement. The pebbles and cobbles of the pavement are derived from the occasional outcrop of tan or maroon sandstone beds. The tan sandstone beds are medium to coarse-grained and up to 4 m thick. The maroon sandstone beds are fine to medium-grained and up to 3 m thick. No fossils were found.

# NBU #920-29N

The proposed access road and pipeline begin in the NE/NW quarter-quarter section of Sec. 32, T 9 S, R 20 E near the well pad "NBU #920-32C" and travel north for approximately 1000 feet where they enter the well pad in the SE/SW quarter-quarter section of Sec. 29 (Figure 1). The proposed well pad, access road, and pipeline are located on rolling hills covered in desert pavement. The pebbles and cobbles of the pavement are derived from the occasional outcrop of tan or maroon sandstone beds. The tan sandstone beds are medium to coarse-grained, up to 4 m thick, and stratigraphically above the maroon sandstone beds. The maroon sandstone beds are fine to medium-grained and up to 3 m thick. No fossils were found.

# NBU #920-32C

The proposed pipeline begins at the end of the gathering pipeline in the center of the NW quarter section of Sec. 32, T 9 S, R 20 E and travels east for approximately 500 feet where it turns north and parallels the access road (Figure 1). The pipeline and access road travel north for approximately 700 feet where they enter the well pad in the NE/NW quarter-quarter section of Sec. 32. The proposed well pad, access road, and pipeline are located on rolling hills covered in desert pavement. The pebbles and cobbles of the pavement are derived from the occasional outcrop of tan and maroon sandstone beds. The tan sandstone beds are medium to coarsegrained and up to 4 m thick. The maroon sandstone beds are fine to medium-grained and up to 3 m thick. Variegated mudstone beds (up to 2 m thick) also outcrop beneath the tan and maroon sandstone beds. No fossils were found.

#### NBU #920-32E

The proposed access road, pipeline, and well pad are located in the SW/NW quarter-quarter section of Sec. 32, T 9 S, R 20 E (Figure 1). The proposed access road begins along the access road for "NBU #920-32D" and travels south and west to where it enters the well pad. The proposed pipeline begins at the gathering pipeline and travels west for approximately 600 feet where it enters the well pad. The proposed well pad, access road, and pipeline are located on rolling hills covered in desert pavement. The pebbles and cobbles of the pavement are derived from the occasional outcrop of maroon sandstone. The maroon sandstone beds are fine to medium-grained and up to 3 m thick. Scattered isolated turtle shell and bone fragments were found on the pad and along the access road.

# NBU #920-32F

The proposed access road, pipeline, and well pad are located in the SE/NW quarter-quarter section of Sec. 32, T 9 S, R 20 E (Figure 1). The proposed access road begins along the access road for "NBU #920-32D" and travels southwest for approximately 500 feet where it enters the well pad. The proposed pipeline begins at the gathering pipeline and travels east approximately 500 feet where it enters the well pad. The proposed pipeline, access road, and well pad are located on rolling hills covered in desert pavement. The pebbles and cobbles of the pavement are derived from fine to medium-grained maroon sandstone beds (2-3 m thick) which outcrop in the area. Trace fossil burrows were observed near the pipeline tie-in, just west of the pad.

#### NBU #920-32K

The proposed access road, pipeline, and well pad are located in the NE/SW quarter-quarter section of Sec. 32, T 9 S, R 20 E (Figure 1). The proposed access road begins off the proposed access road for "State #920- 32N" and travels northwest approximately 800 feet where it enters the well pad. The proposed pipeline begins at the gathering pipeline and travels northwest for approximately 300 feet where it enters the well pad. The proposed well pad, access road, and pipeline are located on rolling hills covered in desert pavement. The pebbles and cobbles of the pavement are derived from the occasional outcrop of tan or maroon sandstone beds. The tan sandstone beds are medium to coarse-grained, up to 4 m thick, and stratigraphically above the maroon sandstone beds. The maroon sandstone beds are fine to medium-grained and up to 3 m thick. No fossils were found.

# State #920-32L

The proposed access road begins at the northwest corner of the well pad "NBU #920-32K" in the NE/SW quarter-quarter of Sec. 32, T 9 S, R 20 S and travels northwest approximately 600 feet where it enters the well pad in the NW/SW quarter-quarter section of Sec. 32 (Figure 1). The proposed pipeline begins along the access road where it intersects the gathering pipeline and parallels the access road to the well pad. The proposed well pad, access road and pipeline are located on rolling hills covered in desert pavement. The pebbles and cobbles of the pavement are derived from the occasional outcrop of tan or maroon sandstone beds. The tan sandstone beds are medium to coarse-grained, up to 4 m thick, and stratigraphically above the maroon sandstone beds. The maroon sandstone beds are fine to medium-grained and up to 3 m thick. No fossils were found.

# State #920-32M

The proposed access road begins at the western edge of the well pad "NBU #920-32N" in the NE/SW quarter-quarter section of Sec. 32, T 9 S, R 20 E and travels southwest approximately 1000 feet where it enters the well pad in the SW/SW quarter-quarter section of Sec. 32 (Figure 1). The proposed pipeline begins at the gathering pipeline in the center of the SW quarter section Sec. 32 and travels southwest where it parallels the access road until it enters the well pad. The proposed well pad, access road, and pipeline are located on rolling hills covered in desert pavement. The pebbles and cobbles of the pavement are derived from the occasional outcrop of tan and maroon sandstone beds. The tan sandstone beds are medium to coarse-grained and up to 4 m thick. The maroon sandstone beds are fine to medium-grained and up to 3 m thick. Variegated mudstone beds (up to 2 m thick) also outcrop beneath the tan and maroon sandstone beds. No fossils were found.

#### State #920-32N

The proposed access road begins at an existing two-track in the SW/SE quarter-quarter section of Sec. 32, T 9 S, R 20 E and travels west approximately 2000 feet where it enters the well pad in the SE/SW quarter-quarter section of Sec. 32 (Figure 1). The proposed pipeline begins at the gathering pipeline in the SE/SW quarter-quarter section of Sec. 32 and travels southeast for approximately 100 feet where it enters the well pad. The proposed well pad, access road, and pipeline are located on rolling hills covered in desert pavement.

The pebbles and cobbles of the pavement are derived from the occasional outcrop of tan or maroon sandstone beds. The tan sandstone beds are medium to coarse-grained, up to 4 m thick, and stratigraphically above the maroon sandstone beds. The maroon sandstone beds are fine to medium-grained and up to 3 m thick. No fossils were found.

#### State #920-32O

The proposed access road, pipeline, and well pad are located in the SW/SE quarter-quarter section of Sec. 32, T 9 S, R 20 E (Figure 1). The proposed access road begins off an existing road and travels west approximately 100 feet where it enters the well pad. The proposed pipeline begins at the gathering pipeline and travels south approximately 300 feet where it enters the well pad. The proposed well pad, access road, and pipeline are located on rolling hills covered in desert pavement. The pebbles and cobbles of the pavement are derived from the occasional outcrop of maroon sandstone beds. The maroon sandstone beds are fine to medium-grained and up to 3 m thick. No fossils were found.

# **Gathering Pipeline**

The proposed gathering pipeline begins in the center of the NW quarter section of Sec. 32, T 9 S, R 20 E and travels south for approximately 0.5 miles, turns east and travels for approximately 0.5 miles, and turns north and travels for approximately 600 feet where it ends in the NW/SE quarter-quarter section of Sec. 32 (Figure 1). The proposed gathering pipeline is located on rolling hills covered in desert pavement. The pebbles and cobbles of the pavement are derived from the occasional outcrop of tan or maroon sandstone beds. The tan sandstone beds are medium to coarse-grained and up to 4 m thick. The maroon sandstone beds are fine to medium-grained and up to 3 m thick. Variegated mudstone beds (up to 2 m thick) also outcrop in the area. No fossils were found.

#### SURVEY RESULTS

PROJECT	GEOLOGY	PALEONTOLOGY
"NBU #920- 29M" (Sec. 29, T 9 S, R 20 E)	The proposed well pad, access road, and pipeline are located on rolling hills covered in desert pavement. The pebbles and cobbles of the pavement are derived from the occasional outcrop of tan or maroon sandstone beds. The tan sandstone beds are medium to coarse-grained and up to 4 m thick. The maroon sandstone beds are fine to medium-grained and up to 3 m thick.	No fossils were found.  Class 3a
"NBU #920- 29N" (Sec. 29, T 9 S, R 20 E)	The proposed well pad, access road, and pipeline are located on rolling hills covered in desert pavement. The pebbles and cobbles of the pavement are derived from the occasional outcrop of tan or maroon sandstone beds. The tan sandstone beds are medium to coarse-grained, up to 4 m thick, and stratigraphically above the maroon sandstone beds. The maroon sandstone beds are fine to medium-grained and up to 3 m thick.	No fossils were found.  Class 3a

"NBU #920- 32C" (Sec. 32, T 9 S, R 20 E)	The proposed well pad, access road, and pipeline are located on rolling hills covered in desert pavement. The pebbles and cobbles of the pavement are derived from the occasional outcrop of tan and maroon sandstone beds. The tan sandstone beds are medium to coarse-grained and up to 4 m thick. The maroon sandstone beds are fine to medium-grained and up to 3 m thick. Variegated mudstone beds (up to 2 m thick) also outcrop beneath the tan and maroon sandstone beds.	No fossils were found. Class 3a
"NBU #920- 32E" (Sec. 32, T 9 S, R 20 E)	The proposed well pad, access road, and pipeline are located on rolling hills covered in desert pavement. The pebbles and cobbles of the pavement are derived from the occasional outcrop of maroon sandstone. The maroon sandstone beds are fine to mediumgrained and up to 3 m thick.	Scattered isolated turtle shell and bone fragments were found on the pad and along the access road. Class 3a
"NBU #920- 32F" (Sec. 32, T 9 S, R 20 E)	The proposed pipeline begins at the gathering pipeline and travels east approximately 500 feet where it enters the well pad. The proposed pipeline, access road, and well pad are located on rolling hills covered in desert pavement. The pebbles and cobbles of the pavement are derived from fine to medium-grained maroon sandstone beds (2-3 m thick) which outcrop in the area.	Trace fossil burrows were observed near the pipeline tie-in, just west of the pad.  Class 3a
"NBU #920- 32K" (Sec. 32, T 9 S, R 20 E)	The proposed well pad, access road, and pipeline are located on rolling hills covered in desert pavement. The pebbles and cobbles of the pavement are derived from the occasional outcrop of tan or maroon sandstone beds. The tan sandstone beds are medium to coarse-grained, up to 4 m thick, and stratigraphically above the maroon sandstone beds. The maroon sandstone beds are fine to medium-grained and up to 3 m thick.	No fossils were found. Class 3a
"State #920- 32L" (Sec. 32, T 9 S, R 20 E)	The proposed well pad, access road and pipeline are located on rolling hills covered in desert pavement. The pebbles and cobbles of the pavement are derived from the occasional outcrop of tan or maroon sandstone beds. The tan sandstone beds are medium to coarse-grained, up to 4 m thick, and stratigraphically above the maroon sandstone beds. The maroon sandstone beds are fine to medium-grained and up to 3 m thick.	No fossils were found. Class 3a

"State #920- 32M" (Sec. 32, T 9 S, R 20 E)	The proposed well pad, access road, and pipeline are located on rolling hills covered in desert pavement. The pebbles and cobbles of the pavement are derived from the occasional outcrop of tan and maroon sandstone beds. The tan sandstone beds are medium to coarse-grained and up to 4 m thick. The maroon sandstone beds are fine to medium-grained and up to 3 m thick. Variegated mudstone beds (up to 2 m thick) also outcrop beneath the tan and maroon sandstone beds.	No fossils were found. Class 3a
"State #920- 32N" (Sec. 32, T 9 S, R 20 E)	The proposed well pad, access road, and pipeline are located on rolling hills covered in desert pavement. The pebbles and cobbles of the pavement are derived from the occasional outcrop of tan or maroon sandstone beds. The tan sandstone beds are medium to coarse-grained, up to 4 m thick, and stratigraphically above the maroon sandstone beds. The maroon sandstone beds are fine to mediumgrained and up to 3 m thick.	No fossils were found. Class 3a
"State #920- 320" (Sec. 32, T 9 S, R 20 E)	The proposed well pad, access road, and pipeline are located on rolling hills covered in desert pavement. The pebbles and cobbles of the pavement are derived from the occasional outcrop of maroon sandstone beds. The maroon sandstone beds are fine to medium-grained and up to 3 m thick.	No fossils were found. Class 3a
"Gathering Pipeline" (Sec. 32, T 9 S, R 20 E)	The proposed gathering pipeline is located on rolling hills covered in desert pavement. The pebbles and cobbles of the pavement are derived from the occasional outcrop of tan or maroon sandstone beds. The tan sandstone beds are medium to coarse-grained and up to 4 m thick. The maroon sandstone beds are fine to medium-grained and up to 3 m thick. Variegated mudstone beds (up to 2 m thick) also outcrop in the area.	No fossils were found. Class 3a

#### RECOMMENDATIONS

A reconnaissance survey was conducted for Kerr McGee's proposed gathering pipeline, well pads, access roads, and pipelines for "NBU #920-29M & N", "NBU #920-32C, F, E, & K", & "State #920-32L, N, M, & O" (Sec. 29 & 32, T 9 S, R 20 E). The well pads and the associated access roads and pipelines covered in this report showed little to no signs of vertebrate fossils. Therefore, we recommend that no paleontological restrictions should be placed on the development of the projects included in this report.

Buried pipeline will encounter Uinta formational sediments along most of the staked pipeline corridors yet indications from surface fossils predict that little if any vertebrate fossils will be disturbed.

Nevertheless, if any vertebrate fossil(s) are found during construction within the project area, recommendations are that a paleontologist is immediately notified in order to collect fossil materials in danger of being destroyed. Any vertebrate fossils found should be carefully moved outside of the construction areas to be check by a permitted paleontologist.

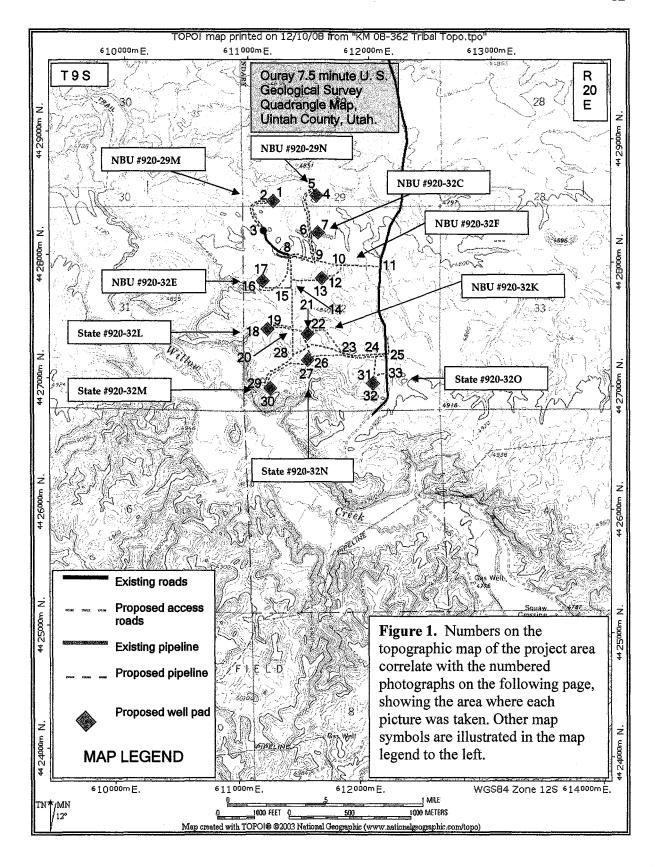


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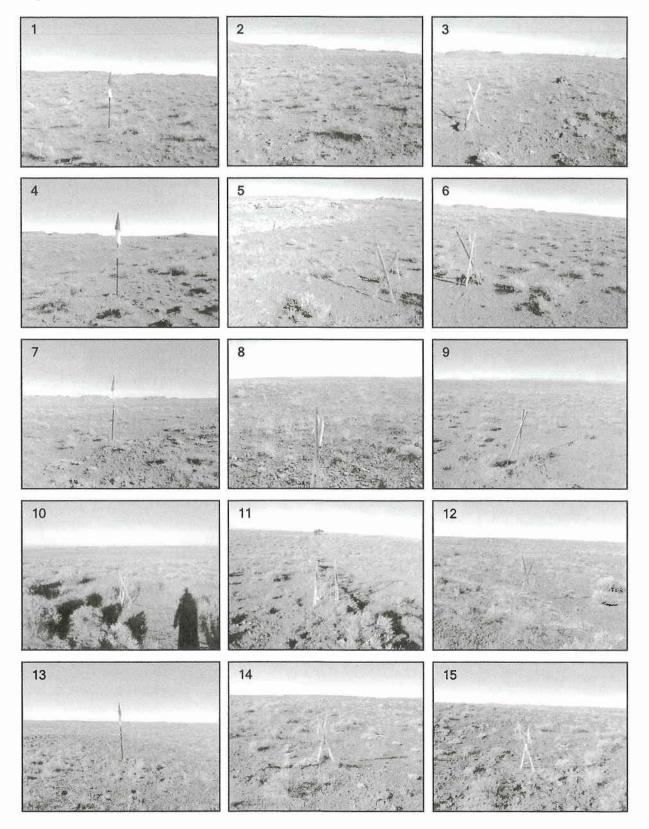


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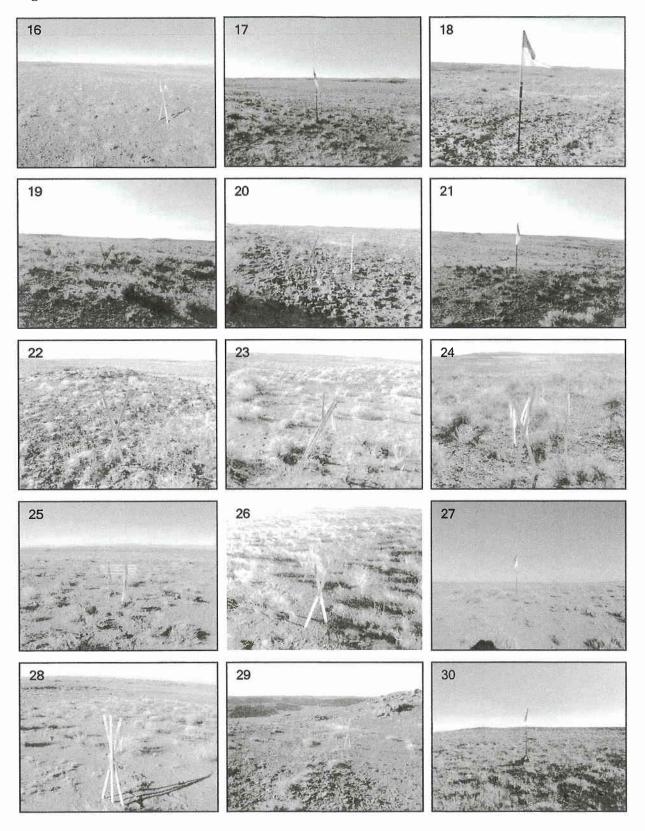
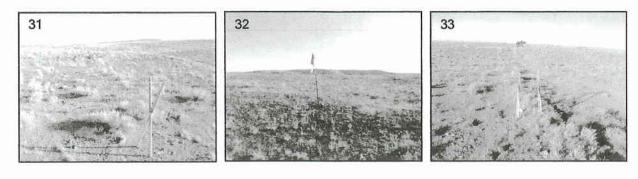


Figure 1. continued...



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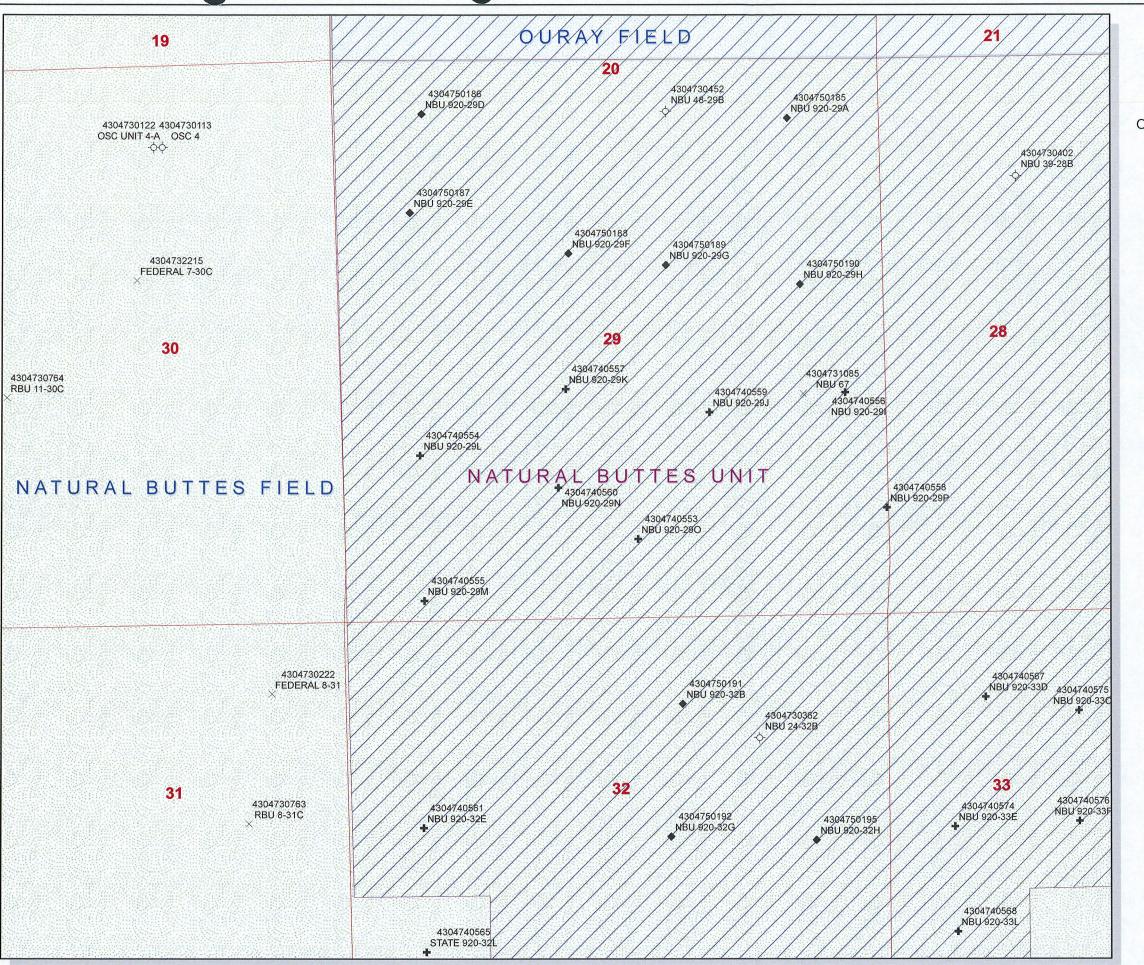
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#### WORKSHEET

#### APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 02/17/2009					
		API NO. ASSIGNED: 43-047-40560			
WELL NAME:	NBU 920-29N				
	KERR-MCGEE OIL & GAS ( N2995 )	Pi	HONE NUMBER:	720-929-6666	6
CONTACT:	RALEEN WHITE				
PROPOSED LO	OCATION:	Ī	NSPECT LOCATN	1 BY: /	/
	29 090S 200E 1254 FSL 2098 FWL	P	lech Review	Initials	Date
	1254 FSL 2098 FWL	E	Engineering		
COUNTY:		G	Geology		
	: 40.00215 LONGITUDE: -109.6919	- S	Surface		·····
	EASTINGS: 611658 NORTHINGS: 442860 ME: NATURAL BUTTES (630)	5			
LEASE NUMBE	: 1 - Federal ER: UTU-141301 NER: 2 - Indian	C	ROPOSED FORMA		<b>√</b> D
RECEIVED AN	ND/OR REVIEWED:	LOCATION	AND SITING:		
Plat		R64	19-2-3.		
Bond: Fed[1] Ind[] Sta[] Fee[] Uni		Unit: NA	it: NATURAL BUTTES		
	• WYB000291 )	R64	9-3-2. Gener	ral	
Potash (Y/N) ✓ Oil Shale 190-5 (B) or 190-3 or 190-13			Siting: 460 From Qtr/Qtr & 920' Between Wells		
<del></del>	r Permit	R64	9-3-3. Excep	otion	
•	. 43-8496 )	✓ Dri	lling Unit		
RDCC (Dat	Review (Y/N) te: )		ard Cause No:	- 1	<u></u>
	Surf Agreement (Y/N)		f Date: ting: 440'fr	12-2-1	199
	nt to Commingle (Y/N)				
		R64	19-3-11. Dire	ectional Dril	
COMMENTS: _	Sop, Sepone	to Se			
STIPULATION	NS: 1- Eden Z-01	Overen	ca tace		
·				<u> </u>	·



API Number: 4304740560 Well Name: NBU 920-29N

Township 09.0 S Range 20.0 E Section 29

Meridian: SLBM

Operator: KERR-MCGEE OIL & GAS ONSHORE, L.P.

Map Prepared: Map Produced by Diana Mason







# BUREAU OF LAND MANAGEMENT Utah State Office P.O. Box 45155 Salt Lake City, Utah 84145-0155

IN REPLY REFER TO: 3160 (UT-922)

March 2, 2009

#### Memorandum

To:

Assistant District Manager Minerals, Vernal District

From:

Michael Coulthard, Petroleum Engineer

Subject:

2009 Plan of Development Natural Buttes Unit Uintah

County, Utah.

Pursuant to email between Diana Whitney, Division of Oil, Gas and Mining, and Mickey Coulthard, Utah State Office, Bureau of Land Management, the following wells are planned for calendar year 2009 within the Natural Buttes Unit, Uintah County, Utah.

API #

WELL NAME

LOCATION

#### (Proposed PZ Wasatch/MesaVerde)

```
43-047-40553 NBU 920-290 Sec 29 T09S R20E 0746 FSL 2465 FEL
43-047-40554
            NBU 920-29L Sec 29 T09S R20E 1572 FSL 0754 FWL
43-047-40555 NBU 920-29M Sec 29 T09S R20E 0159 FSL 0757
43-047-40556 NBU 920-29I Sec 29 T09S R20E 2164 FSL 0400 FEL
43-047-40557 NBU 920-29K Sec 29 T09S R20E 2208 FSL 2197
            NBU 920-29P
                         Sec 29 T09S R20E 1038 FSL 0018
43-047-40558
            NBU 920-29J
                         Sec 29 T09S R20E 1977 FSL 1747
43-047-40559
43-047-40560 NBU 920-29N Sec 29 T09S R20E 1254 FSL 2098
43-047-40542
            NBU 920-220
                         Sec 22 T09S R20E 0198 FSL 2487
             NBU 920-22K Sec 22 T09S R20E 2128 FSL 2497
43-047-40543
            NBU 920-22I
                          Sec 22 T09S R20E 1965 FSL 0599
43-047-40544
             NBU 920-22J
                          Sec 22 T09S R20E 2086 FSL 1575
43-047-40545
43-047-40538 NBU 920-20B
                         Sec 20 T09S R20E 1229 FNL 1580
43-047-40536 NBU 920-20C
                         Sec 20 T09S R20E 0963 FNL 1754
            NBU 920-20F
43-047-40537
                         Sec 20 T09S R20E 1794 FNL 2199
43-047-40539 NBU 920-20E Sec 20 T09S R20E 1644 FNL 1084
43-047-40540 NBU 920-20D
                          Sec 20 T09S R20E 0646 FNL 0686
43-047-40541
            NBU 920-21J Sec 21 T09S R20E 2346 FSL 1748
43-047-40561
            NBU 920-32E Sec 32 T09S R20E 2052 FNL 0707
43-047-40562 NBU 920-32K Sec 32 T09S R20E 2095 FSL 1813 FWL
43-047-40567
            NBU 920-33D Sec 33 T09S R20E 0821 FNL 0925
43-047-40568 NBU 920-33L Sec 33 T09S R20E 2299 FSL 0625
43-047-40574 NBU 920-33E Sec 33 T09S R20E 2079 FNL 0611 FWL
43-047-40575 NBU 920-33C Sec 33 T09S R20E 0971 FNL 1851 FWL
```

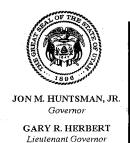
43-047-40576 NBU 920-33F Sec 33 T09S R20E 2048 FNL 1845 FWL 43-047-40535 NBU 920-15PT Sec 15 T09S R20E 0591 FSL 0696 FEL

This office has no objection to permitting the wells at this time.

/s/ Michael L. Coulthard

File - Natural Buttes Unit bcc: Division of Oil Gas and Mining **Central Files** Agr. Sec. Chron Fluid Chron

MCoulthard:mc:3-2-09



## State of Utah

#### DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA

Division Director

March 2, 2009

Kerr-McGee Oil & Gas Onshore, LP P O Box 173779 Denver, CO 80217-3779

Re:

NBU 920-29N Well, 1254' FSL, 2098' FWL, SE SW, Sec. 29, T. 9 South, R. 20 East,

Uintah County, Utah

#### Gentlemen:

Pursuant to the provisions and requirements of Utah Code Ann.§ 40-6-1 *et seq.*, Utah Administrative Code R649-3-1 *et seq.*, and the attached Conditions of Approval, approval to drill the referenced well is granted.

This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date. The API identification number assigned to this well is 43-047-40560.

Sincerely,

Gil Hunt

Associate Director

pab Enclosures

cc:

**Uintah County Assessor** 

Bureau of Land Management, Vernal Office



Operator: Kerr-McGee Oil & Gas Onshore, LP			
Well Name & Number	NBU 920-29N		
API Number:	43-047-40560		
Lease:	UTU-141301		
Location: <u>SE SW</u>	Sec. 29	<b>T.</b> <u>9 South</u>	<b>R.</b> 20 East

#### Conditions of Approval

#### 1. General

Compliance with the requirements of Utah Admin. R. 649-1 *et seq.*, the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for permit to drill.

#### 2. Notification Requirements

Notify the Division within 24 hours of spudding the well.

• Contact Carol Daniels at (801) 538-5284.

Notify the Division prior to commencing operations to plug and abandon the well.

• Contact Dustin Doucet at (801) 538-5281 office (8

(801) 733-0983 home

#### 3. Reporting Requirements

All required reports, forms and submittals will be promptly filed with the Division, including but not limited to the Entity Action Form (Form 6), Report of Water Encountered During Drilling (Form 7), Weekly Progress Reports for drilling and completion operations, and Sundry Notices and Reports on Wells requesting approval of change of plans or other operational actions.

- 4. State approval of this well does not supersede the required federal approval, which must be obtained prior to drilling.
- 5. In accordance with Order in Cause No. 190-5(b) dated October 28, 1982, the Operator shall comply with requirements of Rules R649-3-31 and R649-3-27 pertaining to Designated Oil Shale Areas. Additionally, the operator shall ensure that the surface and/or production casing is properly cemented over the entire oil shale interval as defined by Rule R649-3-31. The Operator shall report the actual depth the oil shale is encountered to the Division.

STATE OF UTAH		FORM 9	
DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING			5.LEASE DESIGNATION AND SERIAL NUMBER: UTU-141301
SUNDRY NOTICES AND REPORTS ON WELLS			6. IF INDIAN, ALLOTTEE OR TRIBE NAME: UTE
	sals to drill new wells, significantly deepen ugged wells, or to drill horizontal laterals. Us		7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES
1. TYPE OF WELL Gas Well	8. WELL NAME and NUMBER: NBU 920-29N		
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONS	9. API NUMBER: 43047405600000		
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th S	treet, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6007 Ext	9. FIELD and POOL or WILDCAT: NATURAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1254 FSL 2098 FWL			COUNTY: UINTAH
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: SESW Section: 29 Township: 09.0S Range: 20.0E Meridian: S			STATE: UTAH
11. CHE	CK APPROPRIATE BOXES TO INDICAT	E NATURE OF NOTICE, REPORT,	OR OTHER DATA
TYPE OF SUBMISSION		TYPE OF ACTION	
	☐ ACIDIZE	ALTER CASING	CASING REPAIR
NOTICE OF INTENT Approximate date work will start: 3/2/2010	CHANGE TO PREVIOUS PLANS	CHANGE TUBING	CHANGE WELL NAME
3, 2, 2010	☐ CHANGE WELL STATUS	COMMINGLE PRODUCING FORMATIONS	CONVERT WELL TYPE
SUBSEQUENT REPORT Date of Work Completion:	DEEPEN	FRACTURE TREAT	☐ NEW CONSTRUCTION
	OPERATOR CHANGE	☐ PLUG AND ABANDON	☐ PLUG BACK
SPUD REPORT	PRODUCTION START OR RESUME	RECLAMATION OF WELL SITE SIDETRACK TO REPAIR WELL	☐ RECOMPLETE DIFFERENT FORMATION ☐ TEMPORARY ABANDON
Date of Spud:	REPERFORATE CURRENT FORMATION  TUBING REPAIR	VENT OR FLARE	WATER DISPOSAL
DRILLING REPORT	WATER SHUTOFF	SI TA STATUS EXTENSION	✓ APD EXTENSION
Report Date:	WILDCAT WELL DETERMINATION	OTHER	OTHER:
			'
Kerr-McGee Oil & G extension to this A	ompleted operations. Clearly show all pert as Onshore, L.P. (Kerr-McGee) PD for the maximum time allow with any questions and/or com	respectfully requests an wed. Please contact the	Approved by the Utah Division of Oil, Gas and Mining
		D	ate: March 01, 2010
			1 00 cm
		В	A: Tree XIII
NAME (PLEASE PRINT) Danielle Piernot	<b>PHONE NUMBER</b> 720 929-6156	TITLE Regulatory Analyst	
SIGNATURE N/A		<b>DATE</b> 2/25/2010	



#### The Utah Division of Oil, Gas, and Mining

- State of Utah
- Department of Natural Resources

**Electronic Permitting System - Sundry Notices** 

#### Request for Permit Extension Validation Well Number 43047405600000

**API:** 43047405600000 **Well Name:** NBU 920-29N

Location: 1254 FSL 2098 FWL QTR SESW SEC 29 TWNP 090S RNG 200E MER S

**Company Permit Issued to:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

**Date Original Permit Issued:** 3/2/2009

The undersigned as owner with legal rights to drill on the property as permitted above, hereby verifies that the information as submitted in the previously approved application to drill, remains valid and does not require revision. Following is a checklist of some items related to the application, which should be verified.

<ul> <li>If located on private land, has the ownership changed, if so, has the surupdated?</li> <li>Yes</li> <li>No</li> </ul>	•
• Have any wells been drilled in the vicinity of the proposed well which we siting requirements for this location?  Yes No	ould affect the spacing or
<ul> <li>Has there been any unit or other agreements put in place that could affer of this proposed well? Yes No</li> </ul>	ect the permitting or operation
<ul> <li>Have there been any changes to the access route including ownership, of affect the proposed location?</li> <li>Yes</li> <li>No</li> </ul>	or rightof- way, which could
• Has the approved source of water for drilling changed?   Yes   No	o
• Have there been any physical changes to the surface location or access change in plans from what was discussed at the onsite evaluation?	
• Is bonding still in place, which covers this proposed well?   Yes	Approved by the No Utah Division of Oil, Gas and Mining

**Signature:** Danielle Piernot **Date:** 2/25/2010

Title: Regulatory Analyst Representing: KERR-MCGEE OIL & GAS ONSHOR March 01, 2010

Bv:

### United States Department of the Interior



#### **BUREAU OF LAND MANAGEMENT**

Green River District-Vernal Field Office 170 South 500 East Vernal, UT 84078 (435) 781-4400 Fax: (435) 781-4410 http://www.blm.gov/ut/st/en/fo/vernal.html



OCT 2 8 2010

IN REPLY REFER TO: 3160 (UTG011)

Julie Jacobson Kerr McGee Oil & Gas Onshore LP PO Box 173779 Denver, CO 80217-3779

43 847 40560

Re:

Request to Return APD Well No. NBU 920-29N SESW, Sec. 29, T9S, R20E Uintah County, Utah Lease No. UTU-0141301 Natural Buttes Unit

Dear Ms. Jacobson:

The Application for Permit to Drill (APD) for the above referenced well received in this office on February 17, 2009, is being returned unapproved per your request to this office in an email message received on September 30, 2010. If you intend to drill at this location at a future date, a new APD must be submitted.

If you have any questions regarding APD processing, please contact Cindy Severson at (435) 781-4455.

Sincerely,

James H. <del>Spa</del>rger

Acting Assistant Field Manager Lands & Mineral Resources

**Enclosures** 

CC:

**UDOGM** 

RECEIVED NOV 0 3 2010

DIV. OF OIL, GAS & MINING



## State of Utah DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA

Division Director

March 15, 2011

Danielle Piernot Kerr-McGee Oil & Gas Onshore, L.P P.O Box 173779 Denver, CO 80217

43 047 40560 NBU 920-29N 95 20E 29

Re:

APDs Rescinded for Kerr McGee O&G Onshore, L.P. Company,

**Uintah County** 

Dear Ms. Piernot:

Enclosed find the list of APDs that are being rescinded per your request to Kerr-McGee Oil & Gas Onshore, L.P. No drilling activity at these locations has been reported to the division. Therefore, approval to drill these wells is hereby rescinded, effective March 14, 2011.

A new APD must be filed with this office for approval prior to the commencement of any future work on the subject location.

If any previously unreported operations have been performed on this well location, it is imperative that you notify the Division immediately.

Sincerely.

Environmental Scientist

cc:

Well File

Bureau of Land Management, Vernal



43-047-50275 43-047-40547 43-047-40549	NBU 605-35E FEDERAL 920-27K FEDERAL 920-27J
43-047-40550	FEDERAL 920-270
43-047-40551	FEDERAL 920-27L
43-047-40552	FEDERAL 920-27N
43-047-40570	FEDERAL 920-33M
43-047-40571	FEDERAL 920-33I
43-047-40578	FEDERAL 920-34M
43-047-40579	FEDERAL 920-34N
43-047-50767	FEDERAL 920-27M
43-047-40553	NBU 920-290
43-047-40554	NBU 920-29L
43-047-40555	NBU 920-29M
43-047-40556	NBU 920-29I
43-047-40557	NBU 920-29K
43-047-40558	NBU 920-29P
43-047-40559	NBU 920-29J
→ 43-047-40560	NBU 920-29N
43-047-40568	NBU 920-33L
43-047-40574	NBU 920-33E
43-047-40575	NBU 920-33C
43-047-40576	NBU 920-33F